# STOCKPILE REPORT
## to the Congress

JANUARY – JUNE 1959

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF CIVIL AND DEFENSE MOBILIZATION
WASHINGTON 25, D.C.

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OFFICE OF THE DIRECTOR

The Honorable Richard M. Nixon
The President of the Senate

The Honorable Sam Rayburn
The Speaker of the House of Representatives

Sirs:

There is presented herewith the semiannual report to the Congress on the strategic and critical materials stockpiling program for the period January 1 to June 30, 1959. A classified statistical supplement to this report will be transmitted to you under separate cover.

This report is submitted pursuant to Section 4 of the Strategic and Critical Materials Stock Piling Act, Public Law 520, 79th Congress.

Sincerely,

Leo A. Hoegh

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# Summary

This report covers principal activities in strategic and critical materials stockpile planning and operations for the period January 1 through June 30, 1959, under the provisions of Public Law 520, 79th Congress.

Strategic stockpile inventories for the 73 materials on the stockpile list as of June 30 substantially equaled or exceeded maximum objectives for 50 materials and basic objectives for 63 materials. If added to the strategic stockpile, additional quantities in other Government inventories would change these totals to 55 and 67 respectively.

The total strategic stockpile inventory of specification-grade Group I materials was valued at $5.78 billion on the basis of June 30, 1959, market prices; $3.88 billion of this amount was applicable to the maximum objectives, which were valued at $4.15 billion, and $1.90 billion represented excess specification-grade inventories for some of the Group I materials acquired, for the most part, under previously higher objectives.

Commitments for open market purchases for the six months' period, all of which were against basic stockpile objectives, totaled approximately $1.3 million. There were no commitments for acquisitions from other sources.

Materials valued at approximately $22 million were delivered to the strategic stockpile under previous commitments.

Government commitments for strategic and critical materials in excess of maximum stockpile objectives were reduced by more than $14,000,000 from January through June.

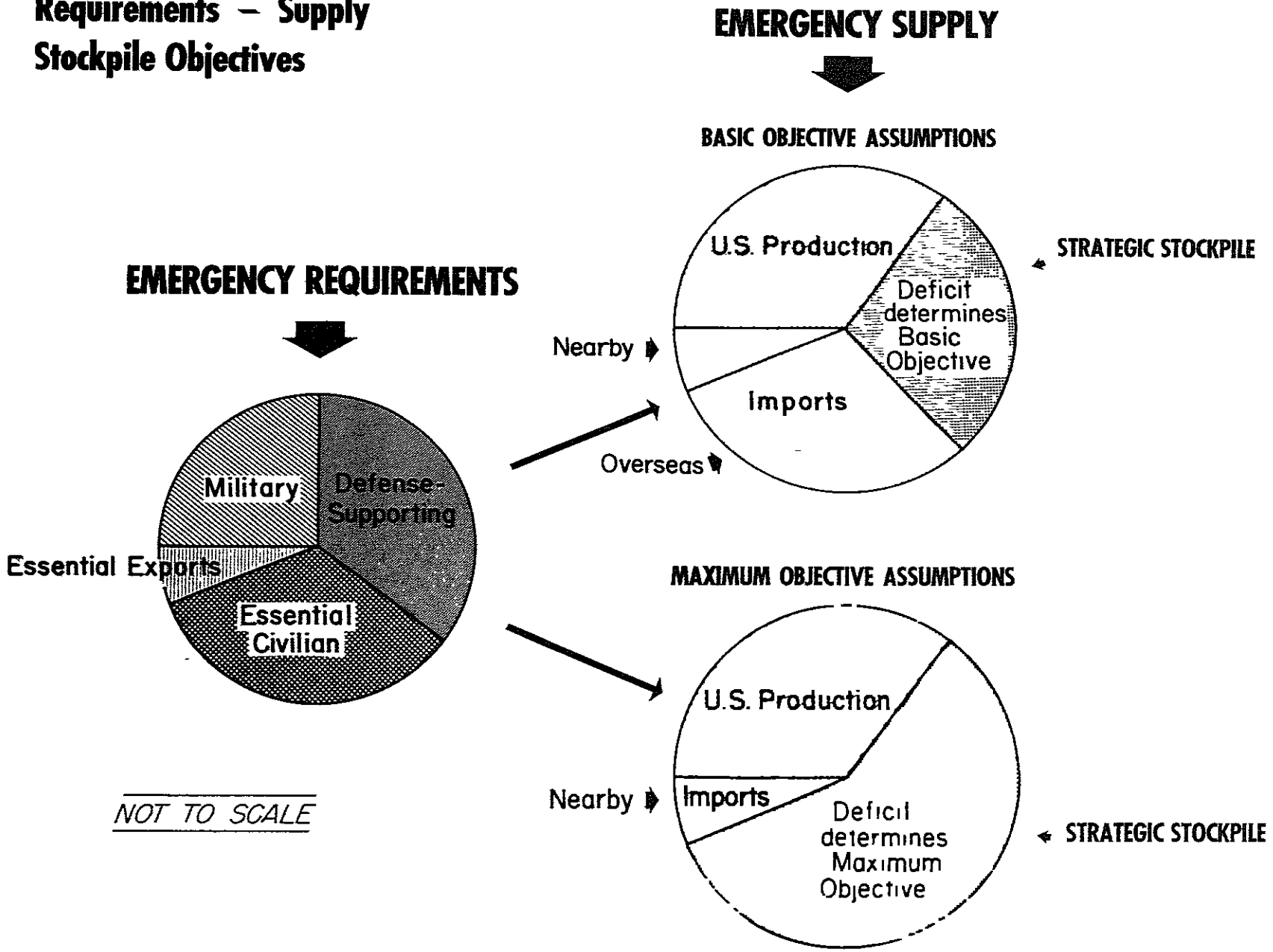
Revised estimates of emergency supply and requirements led to the restoration of two materials, corundum and sapphire and ruby, to Group I of the List of Strategic and Critical Materials for Stockpiling, effective July 1, and the removal of one material, coconut oil, from the stockpile list.

Legislation was proposed to the Congress that would permit an early beginning on disposal of the total inventory of coconut oil in view of the current shortage of world supply resulting from drought in some producing areas.

# STRATEGIC MATERIALS

## Requirements – Supply

## Stockpile Objectives



# The Strategic Stockpile—What It Represents

The Strategic and Critical Materials Stock Piling Act (Public Law 520, 79th Congress) provides for the accumulation of strategic and critical materials for use in the event of a national emergency.

These inventories are acquired on the basis of stockpile objectives determined after study of the estimated availability of U. S. production and imports as against the essential needs for the materials in time of emergency. Chart 1 portrays the composition of emergency requirements and supply as related to strategic stockpile planning. While no effort has been made to show the various segments to scale, it will be noted that:

(1) Emergency requirements are comprised principally of military, defense-supporting and essential civilian needs, with a relatively small portion for essential exports of those materials for which the United States is the principal source of supply.

(2) Emergency supply is comprised of U. S. production and imports, with the potential deficit to be met by a strategic stockpile acquired under the aforementioned Act. (For this purpose, any measures other than stockpiling for overcoming the deficit would be reflected in the segments for U. S. production or imports.)

Emergency supply is shown in two ways to distinguish between the assumptions underlying the basic and maximum stockpile objectives and the resultant inventory labeled "the strategic stockpile." It can be seen that imports, shown as one of the larger segments under basic objective assumptions, dwindle to a relatively small segment of available supply under maximum objective assumptions. This means that for purposes of determining maximum objectives imports are assumed to be available only from North American countries and other foreign sources comparably accessible, whereas for basic objectives some imports from more distant sources are considered to be available. The maximum objective, therefore, includes not only the full quantity of the basic objective but for many materials an increment beyond the basic.

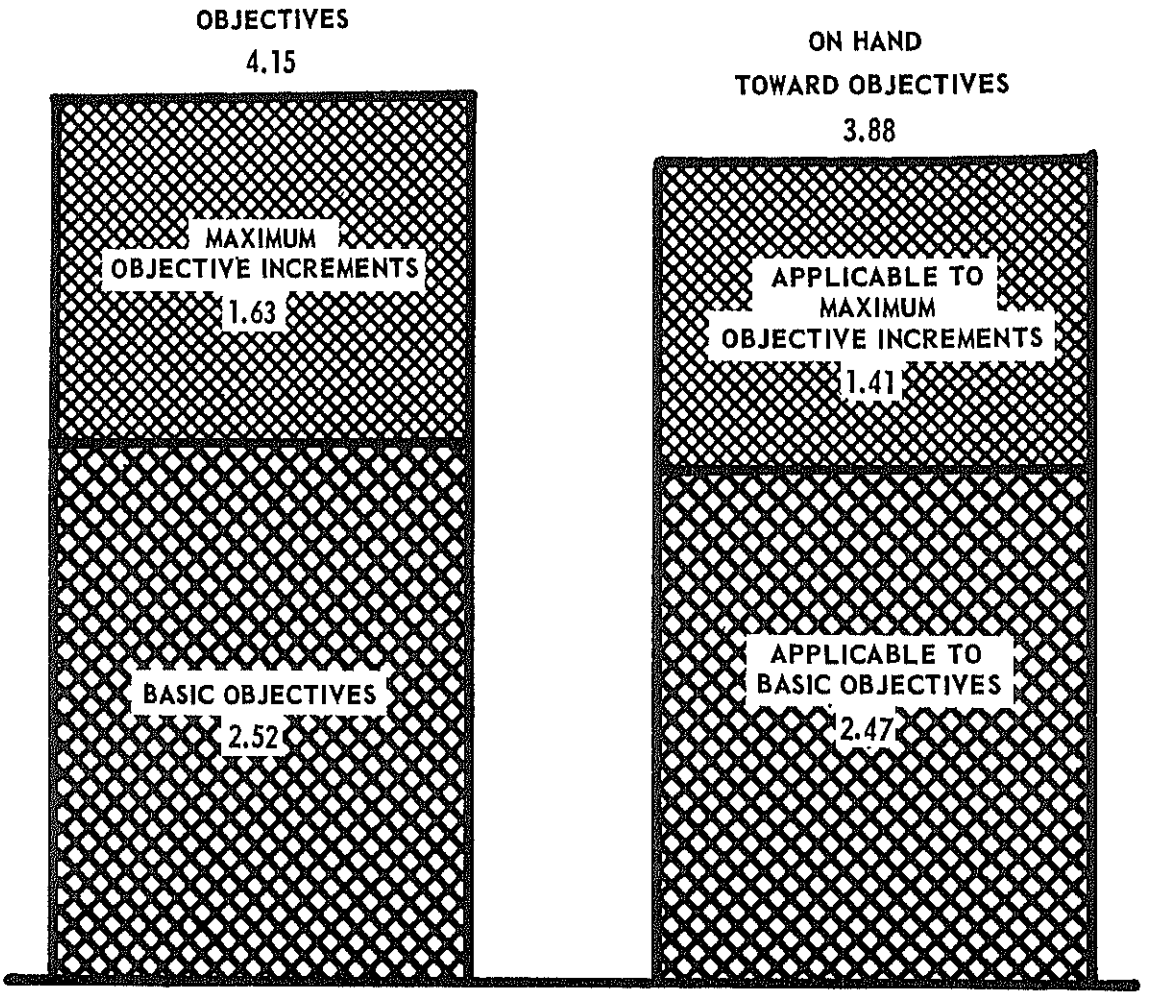
The basic objectives are established principally as a safety measure under the most favorable potential emergency conditions, and acquisition of the necessary stockpile is achieved as expeditiously as possible. Procurement against the maximum objective increment, which is a hedge against a potentially more serious lack of imports, takes a lower priority and rarely includes open market purchases.

*CHART 2*

# STOCKPILE OBJECTIVES AND APPLICABLE STRATEGIC STOCKPILE INVENTORIES

*As of June 30, 1959*

*( In Billions of Dollars, Based on June 30, 1959, Market Prices )*




*Quantities in excess of certain maximum objectives, valued at $1.90 billion, and outstanding commitments of $24.7 million are not included.*

# Status of Strategic Stockpile Inventories

## ACHIEVEMENT OF STOCKPILE OBJECTIVES

Although the List of Strategic and Critical Materials for Stockpiling consists of two groups, Group I and Group II, official stockpile objectives are in effect only for the Group I materials, listed in Table A in this section. As shown by Table A, for the 73 Group I materials officially listed as of June 30, 1959, strategic stockpile inventories were approximately equal to or exceeded the maximum objectives for 50 materials and the basic objectives for 63 materials. Total dollar value of the objectives and applicable inventories is shown in Chart 2.

Quantities of materials in other Government-owned inventories, if transferred to the strategic stockpile, would increase to 55 the number of maximum objectives and to 67 the number of basic objectives met by total Government inventories as of June 30.

Total specification-grade inventories of Group I materials in the strategic stockpile were valued at $5.78 billion on the basis of June 30 market prices. Of the aforementioned inventories, $2.47 billion was applicable to the basic objectives and $1.41 billion was applicable to the maximum objective increments. Excess specification-grade inventories for some of the Group I materials, representing quantities acquired generally against previously higher objectives, are now valued at $1.90 billion as against $2 billion shown in the previous semiannual report.

Total outstanding commitments for the strategic stockpile amounted to approximately $24.7 million.

### TABLE A

*Group I of the List of Strategic and Critical Materials for Stockpiling*

The following list, which constitutes Group I of the materials in the strategic stockpile, identifies the materials for which inventories were approximately equal to or exceeded objectives in effect as of June 30, 1959. Group I materials are acquired by purchase and by transfer of Government-owned surpluses pursuant to Sections 3 (a) and 6 (a) of Public Law 520, 79th Congress. This list, which shows achievement of objectives only if the material is actually in the strategic stockpile inventory, is subject to change as inventories increase and as stockpile programs are revised. In some cases the quantities necessary to complete the objectives are already on order or are available for transfer from other Government-owned inventories; in others, procurement toward completion of the present objectives may be deferred because of potential significant changes in the supply-requirements position.

| Materials | Inventory equals or exceeds | |
|---|---|---|
| | Basic objective | Maximum objective |
| 1. Abrasives, Crude Aluminum Oxide | x | x |
| 2. Aluminum | x | x |
| 3. Antimony | x | |
| 4. Asbestos, Amosite | | |
| 5. Asbestos, Chrysotile | x | x |
| 6. Asbestos, Crocidolite | x | x |
| 7. Bauxite, Metal Grade, Jamaica Type | (1) | (1) |
| 8. Bauxite, Metal Grade, Surinam Type | x | |
| 9. Bauxite, Refractory Grade | x | x |
| 10. Beryl | x | x |
| 11. Bismuth | x | (1) |
| 12. Cadmium | x | x |
| 13. Castor Oil | x | x |
| 14. Celestite | x | x |
| 15. Chromite, Chemical Grade | x | |
| 16. Chromite, Metallurgical Grade | x | x |
| 17. Chromite, Refractory Grade | x | x |
| 18. Cobalt | x | (1) |
| 19. Columbite | x | x |
| 20. Copper | x | x |
| 21. Cordage Fibers, Abaca | | |
| 22. Cordage Fibers, Sisal | | |
| 23. Diamond Dies, Small | | |
| 24. Diamond, Industrial: Crushing Bort | x | x |
| 25. Diamond, Industrial: Stones | x | |
| 26. Feathers and Down, Waterfowl | x | x |
| 27. Fluorspar, Acid Grade | x | x |
| 28. Fluorspar, Metallurgical Grade | x | x |
| 29. Graphite, Ceylon--Crystalline and Amorphous | x | x |
| 30. Graphite, Madagascar--Crystalline Flake and Fines | x | x |
| 31. Graphite, Other Than Ceylon and Madagascar--Crystalline | x | x |
| 32. Hyoscine | x | x |
| 33. Iodine | x | |
| 34. Jewel Bearings | | |
| 35. Lead | x | x |
| 36. Magnesium | x | x |
| 37. Manganese, Battery Grade, Natural Ore | x | x |

See footnote at end of table.

| Materials | Inventory equals or exceeds | |
|---|---|---|
| | Basic objective | Maximum objective |
| 38. Manganese, Battery Grade, Synthetic Dioxide | x | x |
| 39. Manganese, Chemical Grade, Type A Ore | x | x |
| 40. Manganese, Chemical Grade, Type B Ore | (1) | |
| 41. Manganese, Metallurical Grade | x | x |
| 42. Mercury | x | x |
| 43. Mica, Muscovite Block, Stained A/B and Better | x | |
| 44. Mica, Muscovite Film, First and Second Qualities | x | |
| 45. Mica, Muscovite Splittings | x | x |
| 46. Mica, Phlogopite Splittings | x | x |
| 47. Molybdenum | x | x |
| 48. Nickel | x | x |
| 49. Opium | x | x |
| 50. Palm Oil | x | |
| 51. Platinum Group Metals, Iridium | x | x |
| 52. Platinum Group Metals, Palladium | (1) | (1) |
| 53. Platinum Group Metals, Platinum | x | x |
| 54. Pyrethrum | x | x |
| 55. Quartz Crystals | x | x |
| 56. Quinidine | x | x |
| 57. Rare Earths | x | x |
| 58. Rubber, Crude Natural | x | x |
| 59. Selenium | | |
| 60. Shellac | x | |
| 61. Silicon Carbide, Crude | (1) | (1) |
| 62. Silk, Raw | x | x |
| 68. Silk Waste and Noils | x | x |
| 64. Sperm Oil | x | x |
| 65. Talc, Steatite Block | x | |
| 66. Tantalite | x | x |
| 67. Tin | x | x |
| 68. Tungsten | x | x |
| 69. Vanadium | x | x |
| 70. Vegetable Tannin Extract, Chestnut | x | x |
| 71. Vegetable Tannin Extract, Quebracho | x | x |
| 72. Vegetable Tannin Extract, Wattle | x | |
| 73. Zinc | x | x |

[1]Sufficient quantities are on hand in other Government-owned inventories to complete the objectives.

On July 1, 1959, corundum and sapphire and ruby were transferred to the Group I list from Group II, which would increase the total for Group I to 75 materials. Strategic stockpile inventories of these two materials are adequate for the objectives established.

TABLE B

*Group II of the List of Strategic and Critical Materials for Stockpiling*

The following list constitutes Group II of the List of Strategic and Critical Materials for Stockpiling. Although no objectives are in effect for these materials while they are on the Group II list, the supply-requirements position is kept under surveillance. Should it become necessary to establish stockpile objectives against a potential deficit in emergency supply for any of these materials, they will be transferred to the Group I list. Quantities of Group II materials in the strategic stockpile were acquired many years ago principally by the transfer of Government-owned surpluses pursuant to Section 6 (a) of Public Law 520, 79th Congress.

1. Bauxite, Abrasive
2. Corundum*
3. Cryolite, Natural**
4. Diamond Dies, Other Than Small
5. Mica, Muscovite Block, Stained B and Lower
6. Mica, Phlogopite Block
7. Rutile
8. Sapphire and Ruby*
9. Talc, Steatite Ground
10. Titanium Sponge
11. Wool

*Transferred to Group I of the stockpile list, July 1, 1959.

**Removed from stockpile list, July 1, 1959.

## OTHER MATERIALS IN STRATEGIC STOCKPILE INVENTORY

In addition to inventories of specification-grade Group I materials (those for which there are official basic and maximum objectives), the strategic stockpile also contains (1) nonspecification grades of the Group I materials and (2) various materials, such as Group II materials, materials that have been removed from the stockpile list and others, for which there are no stockpile objectives.

Most of the nonspecification-grade stocks were acquired by transfer of Government-owned surplus materials. Some of these were taken under stockpile specifications that are now outmoded for such reasons as changes in industry practice and technological advances; others were taken when stockpile inventories were low, with a view to processing them to usable grades or forms if this were necessary in order to meet emergency demands.

TABLE C

*Strategic Stockpile Inventories of Nonspecification Grades of Materials for Which There Are Stockpile Objectives*

As of June 30, 1959

| Material | Unit | Quantity |
|---|---|---|
| Aluminum | ST | 1,676 |
| Bauxite, Metal Grade, Surinam Type | LDT | 24 |
| Bismuth | LB | 36,580 |
| Cadmium | LB | 1,765,200 |
| Celestite | SDT | 12,171 |
| Chromite, Metallurgical Grade | LDT | 361 |
| Cordage Fibers, Abaca | LB | 379,395 |
| Cordage Fibers, Sisal | LB | 44,607 |
| Diamond Dies, Small | PC | 8,375 |
| Fluorspar, Acid Grade | SDT | 4,960 |
| Graphite, Madagascar--Crystalline Fines | ST | 1,054 |
| Jewel Bearings | PC | 14,715,973 |
| Magnesium | ST | 7,446 |
| Manganese, Metallurgical Grade | LDT | 432,213 |
| Mica, Muscovite Block, Stained A/B and Better | LB | 348,514 |
| Mica, Muscovite Film, 1st and 2d Qualities | LB | 23,674 |
| Nickel | LB | 2,345,937 |
| Opium | LB | 1,215 |
| Platinum Group Metals, Platinum | TrOz | 3,379 |
| Pyrethrum | LB | 130 |
| Quartz Crystals | LB | 11,914 |
| Tungsten | LB | 15,410,261 |
| Vanadium | LB | 447,828 |

TABLE D

*Strategic Stockpile Inventories of Materials for Which There Are No Stockpile Objectives*

As of June 30, 1959

| Material | Unit | Quantity |
|---|---|---|
| Agar | LB | 198,173 |
| Bristles, Hog | LB | 1,232,465 |
| Coconut Oil | LB | 265,835,228 |
| Cotton, Extra Long Staple | LB | 109,798,811 |
| Diamond Dies, Other Than Small | PC | 355 |
| Diamonds, Cuttables and Gems | KT | 55,461 |
| Diamonds, Tools | PC | 64,197 |
| Guayule Seeds | LB | 17,426 |
| Mica, Muscovite Block, Stained B and Lower | LB | 4,674,994 |
| Mica, Muscovite Film, 3d Quality | LB | 493,737 |
| Mica, Phlogopite Block | LB | 223,013 |
| Platinum Group Metals, Osmium | TrOz | 27 |
| Platinum Group Metals, Rhodium | TrOz | 3,136 |
| Platinum Group Metals, Ruthenium | TrOz | 51 |
| Poppy Seeds, Opium | LB | 51,646 |
| Quartz, Processed | PC | 7,625,082 |
| Quinine | OZ | 11,987,557 |
| Quinine, Hydrochloride of | OZ | 1,872,460 |
| Rutile | SDT | 18,593 |
| Talc, Steatite Ground | ST | 6,285 |
| Totaquine | OZ | 7,820,275 |
| Zirconium Ore, Baddeleyite | SDT | 16,533 |
| Zirconium Ore, Zircon | SDT | 15,902 |

# Activities for the Period January-June 1959

## STOCKPILE REVIEWS

Based on full-scale supply-requirements studies, during the six months' period January to June, the Office of Civil and Defense Mobilization reviewed interim stockpile objectives established June 30, 1958, with the following results: Nine basic objectives and eight maximum objectives were decreased, four basic and four maximum objectives were increased, one maximum objective was reaffirmed, and one material was removed from the stockpile list.

Although the official actions were not taken until July 1, additional reviews during this same six months' period resulted in the following: decrease of four basic and four maximum objectives, increase of four basic and four maximum objectives, removal of one material from the stockpile list, and the transfer of two materials from Group II to Group I of the stockpile list.

## PROCUREMENT

The principal activity in stockpile procurement during this report period was the execution of contracts for upgrading Government-owned materials to the higher-use forms: oxygen-free copper, tungsten carbide powder, ferrovanadium, molybdic oxide and ferromolybdenum. These readily usable forms of strategic materials will become a part of the minimum readiness inventory designed to meet the initial surge of demand and abnormal conditions of intensive mobilization.

Other activities included the consummation of contracts with producers and importers of small diamond dies, arrangements for acquisition of amosite asbestos by a Commodity Credit Corporation barter contract, and the curtailment of purchases of muscovite block and film mica because of reduced mobilization requirements.

Total commitments and deliveries for the strategic stockpile for the period January to June are shown by dollar value in Table E.

TABLE E

*Commitments and Deliveries for the Strategic Stockpile, January-June 1959*
*Valued at June 30, 1959, Market Prices*

(Thousands of dollars)

| Source of stockpile materials | Toward basic objectives | | Additional toward maximum objective increments | | Total applicable to objectives | |
|---|---|---|---|---|---|---|
| | Commitments | Deliveries | Commitments | Deliveries | Commitments | Deliveries[2] |
| Open market | 550 | 653 | 808 | 3,830 | 1,358 | 4,483 |
| DPA inventories | 0 | 0 | 0 | 0 | 0 | 0 |
| CCC inventories | 0 | 0 | 0 | 0 | 0 | 0 |
| Foreign aid programs[1] | 0 | 0 | 0 | 2,964 | 0 | 2,964 |
| Surplus declarations[1] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 550 | 653 | 808 | 6,794 | 1,358 | 7,447 |

[1]These materials are acquired without expenditure of stockpile funds.

[2]Does not include quantities delivered, valued at $14.6 million, that are in excess of the present maximum stockpile objectives principally because of the reduction in the stockpile planning period from 5 years to 3 years.

Source of Data: General Services Administration.

## PURCHASE SPECIFICATIONS

Revised stockpile purchase specifications for ferromanganese and molybdenum were issued to the General Services Administration.

## STOCKPILE STORAGE AND MAINTENANCE

Strategic and critical materials were stored at 217 locations on June 30, as follows:

| Type of facility | June 30, 1959 | Change in last six months |
|---|---|---|
| Military depots | 62 | -2 |
| GSA depots | 18 | 0 |
| Other Government-owned sites | 7 | +1 |
| Industrial plantsites | 38 | +1 |
| Leased commercial sites | 13 | +2 |
| Commercial warehouses | 79 | 0 |
| Port storage sites | 0 | -1 |
| Total | 217 | +1 |

During the six months' period, approximately 1.9 million tons of strategic materials were received and stored at the above locations. Of the total tonnage, 5% was added to the strategic stockpile, 35% to the Defense Production Act inventories, 59% to the Commodity Credit Corporation inventories, and 1% to the Department of the Interior inventories under P. L. 733.

Negotiations are still in process for the transfer to GSA, for direct operation, of the two Department of Defense depots mentioned in the last Stockpile Report. Plans are also under way for transfer to GSA of two additional depots which are excess to military requirements. Each of these depots contains substantial quantities of stockpile materials.

Stockpile policies provide for storage of quantities of strategic and critical materials applicable to stockpile objectives in consuming areas to minimize the burden on transportation facilities and to provide continuity of production despite temporary disruption of transportation in time of emergency. When it is not necessary to store near newly established consumers, quantities in excess of stockpile objectives may be stored near the domestic source or the port of import. A reduction in transportation expense became feasible in a number of instances with the general reduction in stockpile objectives effective June 30, 1958, brought about by the change from a 5-year to a 3-year stockpile planning period. A recent example of this saving in expenditures for transportation of materials excess to objectives is the storage of ferronickel at a producing plant in Oregon. Similar arrangements are being made for storage of aluminum, also in Oregon.

Continued emphasis is being placed on the qualitative maintenance of stockpile inventories so that asset values will be preserved and the materials will be immediately ready for emergency use. In line with this, 157 preservation and maintenance projects were authorized during the six months' period, and 130 projects previously authorized were completed. These projects involve container rehabilitation, repackaging in containers capable of withstanding long-term storage, protection of ore piles to minimize contamination and erosion loss, special care of certain perishable materials to prevent rodent and insect infestation, marking and identification of materials, repairs and improvements to storage structures and grounds, and improvements to fire protection facilities.

During the period, over 25,000 inspections were made of strategic materials received under the various programs administered by GSA.

The program for taking a physical inventory of all stocks of strategic and critical materials is scheduled for completion by June 30, 1960. Such inventory-taking has now been completed at all commercial warehouses, at 11 GSA depots and at 26 military depots. During the past six months' period, inventory-taking was initiated at 32 additional military depots.

## CANCELLATION OF COMMITMENTS

The Government's policy with respect to cancellation of commitments for deliveries of strategic and critical materials was stated in the Stockpile Report to the Congress for the period January-June 1958; namely, that efforts would be made to cancel such commitments when the deliveries would cause inventories to exceed the maximum stockpile objectives. Settlements accomplished during the last six months, that have been mutually satisfactory to both the supplier and the Government, have reduced the Government's commitments by more than $14,000,000, and negotiations were initiated for additional settlements.

## DISPOSAL PROGRAMS

Activities with respect to disposal of Government inventories are summarized under the section, "Notes on Strategic and Critical Materials." Actions are reported for agar, hog bristles, castor oil, coconut oil, cryolite, opium poppy seed, pyrethrum, quinine and totaquine, titanium and zirconium ore.

# Notes on Strategic and Critical Materials

*AGAR*

The entire stockpile quantity of this material was authorized for disposal because of obsolescence. Invitations for bids were issued upon expiration of the six months' waiting period after publication of the notice of the proposed disposal plan in the Federal Register.

*ALUMINUM*

During the period January-June 1959, 34,991 short tons of primary aluminum was put to the Government under the Defense Production Act aluminum expansion program.

*ASBESTOS*

A study of the crocidolite asbestos supply-requirements position has confirmed the absence of either military or civilian essential requirements for soft, or Bolivian blue, crocidolite, which is the type that was designated and acquired for the strategic stockpile against a previous deficiency. The need for retention of the soft crocidolite or possible stockpiling of another type for defense purposes is now being reviewed.

*BAUXITE*

In view of the magnitude of the deposits of low-grade bauxite discovered last year in Hawaii, additional investigations were undertaken by the Bureau of Mines and the Geological Survey in cooperation with the Government of Hawaii. Samples will be tested to develop methods of concentrating the bauxite and extracting the alumina.

*BERYLLIUM*

The Bureau of Mines continued its intensive search for beryl resources as well as its metallurgical research on recovery of beryl and the metal.

*BRISTLES, HOG*

During the last six months, approximately 440,000 pounds of hog bristles were sold under the disposal program begun in 1956, 36,000 pounds of which had not been moved out of the stockpile by the end of the reporting period. The sales totaled $2,820,000, bringing to almost $13,000,000 the recovery of Government funds under this program since the material was removed from the stockpile list.

*CADMIUM*

Bureau of Mines research sought to improve methods of extracting cadmium from zinc concentrate by pelletizing the concentrate and roasting the pellets in a fluosolids reactor. Other experiments were conducted on a distillation process for separation of cadmium from scrap cadmium-zinc alloy.

*CASTOR OIL*

A stock of castorbean seed for emergency production purposes has been held by the Commodity Credit Corporation, along with hulling and harvesting equipment. Because of loss of viability and reduced defense needs, the Department was authorized to dispose of the entire quantity of seed. Preliminary studies indicate that replacement of the stock may not be necessary.

The Department of Agriculture continued its program of castorbean breeding and production research in California, Arizona, Texas, Oklahoma and Mississippi, to develop improved varieties for each area.

*COCONUT OIL*

A disposal plan for this material, which was removed from the stockpile list on April 9, 1959, was published in the Federal Register of June 23. New and better materials have been developed for the principal use for which coconut oil was stockpiled. Because of the shortage of world supply, brought about by drought conditions in some producing areas, special legislation has been proposed to the Congress which would waive the six months' waiting period now required by the Stock Piling Act before disposal can take place. Terms and conditions for sale of the oil are being prepared for immediate use if the waiver is obtained.

*COLUMBIUM-TANTALUM*

Bureau of Mines scientists have discovered a promising new mechanism for separating columbium from tantalum by selective conversion of columbium pentachloride to iodide. Tantalum pentachloride can then be separated from the columbium iodide by taking advantage of a difference in the relative vaporizing temperatures. Improved methods for recovering columbium, tantalum and other rare metals from euxenite have also been developed by the Bureau of Mines.

*CORDAGE FIBERS*

Approximately 67,000,000 pounds of abaca and sisal were rotated during the period January-June. This brings the total for the fiscal year 1959 to 112,000,000 pounds, the largest quantity rotated during any year since the program was

instituted. Practically all the fiber rotated was 7 or more years old.

Liquidation of the Central American abaca plantations was approved. These plantations have been in operation under U. S. Government supervision in accordance with provisions of the Abaca Act of 1950. Of the 8,500 acres still in cultivation at the beginning of 1959, 5,500 were harvested during this reporting period, yielding approximately 8,000,000 pounds of fiber, which was delivered to the strategic stockpile under the rotation program. Harvesting of the remaining 3,000 acres will be completed by October 1959. Sale of the equipment and facilities is in process and will be completed by March 31, 1960, the termination date of the Abaca Act.

*CORUNDUM*

On July 1, 1959, just after the end of this reporting period, corundum was transferred from Group II to Group I of the stockpile list, and a stockpile objective was established to cover the needs of industry in an emergency until such time as it can accomplish a changeover to the use of other more plentiful and readily available abrasives.

*CRYOLITE—ALUMINUM FLUORIDE*

A review of current estimates of the supply-requirements position for these materials in the event of a national emergency showed no serious supply problems. It was therefore determined that natural cryolite should be removed from Group II of the List of Strategic and Critical Materials for Stockpiling where it had been retained for several years for surveillance of the supply-requirements position.

Natural cryolite has not been stockpiled since World War II; however, there is a small quantity of synthetic cryolite in the Defense Production Act inventory which is now available for disposal. Industry interest thus far in purchasing this cryolite has been limited. GSA is preparing revised invitations in the hope of accomplishing an early disposal.

*DIAMOND, INDUSTRIAL*

It will be noted that the entries on the stockpile list for industrial diamond have been slightly revised to conform to the trade nomenclature.

*JEWEL BEARINGS*

Acquisition of jewel bearings for the strategic stockpile during the six months' period was confined to instrument jewel bearings produced at the Turtle Mountain facility at Rolla, North Dakota.

*KYANITE-MULLITE*

The proposed plan for disposal of 3,664 short tons of kyanite-mullite was published in the Federal Register, January 20, 1959.

*MANGANESE*

Bureau of Mines field and laboratory study of Arkansas manganiferous limestone has disclosed in the Batesville district a manganese resource of more than 150,000,000 short tons of material containing approximately 5 percent manganese. Although the material is low-grade, its location and magnitude place it among the five largest potential domestic sources of manganese.

*MICA*

In view of the substantial reduction in stockpile objectives for muscovite block and film mica, action was under way to exercise the option of canceling by June 30, 1960, long-term purchase contracts entered into under the Defense Production Act expansion program.

Five contracts remain in force under the Synthetic Mica Research Program. The Bureau of Standards is developing basic data on the bonding forces in natural mica which may have an important bearing on the rebonding of synthetic mica flakes. The Bureau of Mines and three non-Government contractors are working on producing bonded and recrystallized sheets. Favorable results have been obtained in some cases on both the raw mat for capacitor film and the recrystallized sheets for electron tube spacers. Test sheets have been supplied manufacturers of electron tubes and capacitors. Efforts are being made to determine the exact conditions under which the most favorable sheets have been produced, in order to stabilize the process.

*NICKEL-COBALT*

Under the policy of canceling commitments for unneeded, undelivered quantities under contract when mutual settlement can be arranged, two contracts have been amended reducing future deliveries of nickel to the Government. The firm quantity of cobalt to be delivered under one of these contracts was also reduced substantially.

*OPIUM POPPY SEED*

GSA was authorized to prepare a plan for disposal of the stock of opium poppy seed that has been held by the Department of Agriculture since 1951. The details leading to this determination were reported in the last Stockpile Report to the Congress.

Eight new poppy strains with higher morphine content than the variety of seed that had been stockpiled were planted in Arizona by the Department of Agriculture for evaluating plot performance and seed increase. Small seed lots of the new strains will be available in the event more extensive growing is needed in this country.

*PYRETHRUM*

Disposal of a portion of the strategic stockpile of pyrethrum, an insecticide, was author-

ized because of development, and acceptance of new and better materials for some of the former uses of pyrethrum. Notice of the plan of disposal has been published in the Federal Register. It is expected that the material will be offered for sale promptly after the required six months' waiting period which expires September 3, 1959.

*QUININE AND TOTAQUINE*

The entire stockpile quantity of quinine and totaquine was authorized for disposal because of obsolescence for essential defense uses in time of an emergency. Notice of the proposed disposal has been published in the Federal Register. Invitations to bid will be issued as soon as possible after October 1, 1959.

*RARE EARTHS*

Under a program of research and development for rare-earth metals, the Bureau of Mines produced, experimentally, high-purity yttrium metal under controlled atmosphere and pressure by a technique similar to the Kroll process. Ridding the metal of dissolved gases (primarily oxygen) resulted in changing it from a brittle to a ductile material that could be cold-rolled.

A report was published on a process for extraction of rare-earth elements from bastnaesite concentrates. From a commercial viewpoint the process is in an embryonic stage of development, but it has proved successful in producing feed stock for laboratory research on separation of the individual rare-earth elements.

*RUBBER*

Between January and June, 19,241 long tons of natural rubber were rotated as compared to 20,989 tons rotated during the previous reporting period.

GSA has been authorized to plan the disposal of the inventory of guayule seed, stored at the U. S. Agricultural Research Station at Salinas, California. Guayule production cannot be counted upon toward a supply of natural rubber within a three-year emergency period. In addition, the recent successful synthesis and pilot production of synthetic "natural" rubber eliminates any apparent need for relying on guayule.

The Department of Agriculture, however, maintains research on guayule on a standby basis, which includes selection for higher rubber content, higher yield of shrub, and greater disease resistance, within segregating populations previously developed by plant breeding. The Department reports that should there develop a further need for guayule, small seed lots of superior strains will be available. Approximately 30 of the most advanced genetic lines of guayule were planted at Salinas, California, in May 1959, for the purpose of increasing seed supplies.

*SAPPHIRE AND RUBY*

On July 1, just after the end of this reporting period, sapphire and ruby was returned to Group I of the stockpile list with an established objective to provide raw material for the initial needs of the domestic jewel bearings industry in the event of an emergency.

*SPECIAL-PROPERTY MATERIALS*

Further reports on the supply of and demand for special-property materials were received from various Government agencies during the first six months of 1959. Thus far, these studies have not required additions to the List of Strategic and Critical Materials for Stockpiling or changes in composition of the present stockpile inventories.

The Government is continuing its efforts to assess future requirements for special-property materials and the possible need for expansion of their supply.

*TALC, BLOCK STEATITE*

Evaluation tests recently completed by two power-tube manufacturers under sponsorship of the U. S. Army Signal Supply Agency, showed that insulators made from phosphate-bonded steatite talc were equal to insulators made from natural block steatite talc. Phosphate-bonded talc was reported to be more difficult to fabricate and manufacturing losses were two or three percent greater, but its use required no changes in tube-manufacturing procedures.

*TITANIUM*

The Bureau of Standards contract with GSA to establish standard samples of titanium sponge and expedite the preparation of titanium alloy standards terminated March 29, 1959. Standards for sponge and some alloys were established and prepared for issue. The Bureau will continue working on the other alloys under its own program as the need arises.

The Bureau of Mines, under a contract with GSA, began operation of a 10,000-ampere electrolytic cell to evaluate the commercial feasibility of its process for recovering titanium metal from titanium scrap and other titaniferous materials. The cell has produced 100 pounds of high-purity titanium metal a day from a low-grade titanium metal feed. Future work will be aimed at determining optimum conditions for the process.

The firm under contract to design, construct and operate an explosion-proof skull-type furnace for melting titanium and for scrap recovery, expected to have the furnace ready for operation shortly after the end of this reporting period.

Disposal of titanium of 170 to 220 Brinell

hardness, in the Defense Production Act inventories, was authorized in May 1959. As of June 30, GSA was preparing to advertise for bids on the 35,073 pounds of this material on hand.

*ZIRCONIUM ORE*

GSA's proposed disposition of baddeleyite was published in the Federal Register on March 13, 1959.

# Appendix A

FINANCIAL SUMMARY OF STOCKPILE OPERATIONS AS OF JUNE 30, 1959

TABLE 1 STATUS OF OBLIGATIONAL OPERATIONS

AS OF JUNE 30, 1959

| AUTHORITY | APPROPRIATED FUNDS a/ | AUTHORIZATIONS FOR MAKING ADVANCE CONTRACTS b/ | AUTHORIZATIONS FOR LIQUIDATING OUTSTANDING ADVANCE CONTRACTS c/ | TOTAL OBLIGATIONAL AUTHORITY (CUMULATIVE) d/ |
|---|---|---|---|---|
| Under PL 117 - 76th Congress | | | | |
| PL 361 - 76th Congress, August 9, 1939 | $ 10,000,000 | $ | $ | $ 10,000,000 |
| PL 442 - 76th Congress, March 25, 1940 | 12,500,000 | | | 22,500,000 |
| PL 667 - 76th Congress, June 26, 1940 | 47,500,000 | | | 70,000,000 e/ |
| Under PL 520 - 79th Congress | | | | |
| PL 663 - 79th Congress, August 8, 1946 | 100,000,000 | - | - | 100,000,000 |
| PL 271 - 80th Congress, July 30, 1947 | 100,000,000 | 75,000,000 | - | 275,000,000 |
| PL 785 - 80th Congress, June 25, 1948 | 225,000,000 | 300,000,000 | - | 800,000,000 |
| PL 785 - 80th Congress, June 25, 1948 | 75,000,000 | - | 75,000,000 | 800,000,000 |
| PL 119 - 81st Congress, June 23, 1949 | 40,000,000 | 270,000,000 | - | 1,110,000,000 |
| PL 150 - 81st Congress, June 30, 1949 | 275,000,000 | 250,000,000 | - | 1,635,000,000 |
| PL 150 - 81st Congress, June 30, 1949 | 250,000,000 | - | 250,000,000 | 1,635,000,000 |
| PL 434 - 81st Congress, October 29, 1949 | - | - | 100,000,000 f/ | 1,535,000,000 |
| PL 759 - 81st Congress, September 6, 1950 | 365,000,000 | - | 240,000,000 | 1,660,000,000 |
| PL 759 - 81st Congress, September 6, 1950 | 240,000,000 | 125,000,000 | - | 2,025,000,000 |
| PL 843 - 81st Congress, September 27, 1950 | 573,232,449 g/ | - | - | 2,598,232,449 |
| PL 911 - 81st Congress, January 6, 1951 | 1,834,911,000 | - | - | 4,433,143,449 |
| PL 253 - 82nd Congress, November 1, 1951 | 590,216,500 | - | - | 5,023,359,949 |
| PL 253 - 82nd Congress, November 1, 1951 | 200,000,000 | - | 200,000,000 | 5,023,359,949 |
| PL 455 - 82nd Congress, July 25, 1952 | 203,979,000 | - | 70,000,000 | 5,157,338,949 |
| PL 176 - 83rd Congress, July 31, 1953 | - | - | 30,000,000 | 5,127,338,949 |
| PL 428 - 83rd Congress, June 24, 1954 | - | - | 27,600,000 | 5,099,738,949 |
| PL 663 - 83rd Congress, August 26, 1954 | 379,952,000 h/ | - | - | 5,479,690,949 |
| PL 112 - 84th Congress, June 30, 1955 | 321,721,000 i/ | - | - | 5,801,411,949 |
| PL 112 - 84th Congress, June 30, 1955 | 27,400,000 | - | 27,400,000 | 5,801,411,949 |
| PL 844 - 85th Congress, August 28, 1958 | 3,000,000 | - | - | 5,804,411,949 |
| Total PL 520 | 5,804,411,949 j/ | 1,020,000,000 | 1,020,000,000 | 5,804,411,949 |
| Total PL 117 and PL 520 | 5,874,411,949 j/ | 1,020,000,000 | 1,020,000,000 | 5,874,411,949 |

a/ Congressional appropriations of funds for stockpiling purposes.
b/ Congressional appropriations of contracting authority for stockpiling purposes in advance of appropriation of funds.
c/ Congressional authorization to liquidate outstanding obligations incurred under previously granted advance contract authority.
d/ Cumulative total of appropriated funds and advance contract authorization, less authorization to liquidate outstanding advance contracts.
e/ Excludes $8,845,792 received from sale of stockpile materials for wartime consumption. Receipts were returned to Treasury, February 1948
f/ Cancellation of previously authorized authority to make contracts.
g/ Excludes $25,404,921 transferred to operating expenses for rehabilitation of Government-owned material producing plants.
h/ Excludes $48,000 transferred to Transportation and Public Utilities Service, GSA.
i/ Excludes $430,000 transferred to Transportation and Public Utilities Service, GSA and $199,349,000 transferred to General Fund Receipts on June 27, 1956 - PL 623 - 84th Congress.
j/ Excludes receipts from rotational sales.

Source: General Services Administration

TABLE 2 TOTAL OBLIGATIONS AND EXPENDITURES OF STOCKPILING FUNDS

CUMULATIVE AND BY FISCAL PERIOD, THROUGH JUNE 30, 1959

| Fiscal Period | Obligations Incurred A/ | | Expenditures B/ | |
|---|---|---|---|---|
| | Net Change By Fiscal Period | Cumulative As of End of Period | By Fiscal Period | Cumulative As of End of Period |
| Prior to Fiscal Year 1948 | $ 123,871,685 | $ 123,871,685 | $ 66,330,731 | $ 66,330,731 |
| Fiscal Year 1948 | 252,901,411 | 376,773,096 | 82,907,575 | 149,238,306 |
| Fiscal Year 1949 | 459,766,881 | 836,539,977 | 304,486,177 | 453,724,483 |
| Fiscal Year 1950 | 680,427,821 | 1,516,967,798 | 440,834,970 | 894,559,453 |
| Fiscal Year 1951 | 2,075,317,099 | 3,592,284,897 | 655,537,199 | 1,550,096,652 |
| Fiscal Year 1952 | 948,117,547 | 4,540,402,444 | 844,683,459 | 2,394,780,111 |
| Fiscal Year 1953 | 252,375,163 | 4,792,777,607 | 906,158,850 | 3,300,938,961 |
| Fiscal Year 1954 | 116,586,681 | 4,909,364,288 | 644,760,321 | 3,945,699,282 |
| Fiscal Year 1955 | 321,799,833 | 5,231,164,121 | 801,310,094 | 4,747,009,376 |
| Fiscal Year 1956 C/ | 251,692,667 | 5,482,856,788 | 382,011,786 C/ | 5,129,021,162 C/ |
| Fiscal Year 1957 | 190,000,109 | 5,672,856,897 | 354,576,558 | 5,483,597,720 |
| Fiscal Year 1958 | 54,473,250 | 5,727,330,147 | 173,753,997 | 5,657,351,717 |
| Fiscal Year 1959 | 38,711,213 | 5,766,041,360 | 65,260,432 | 5,722,612,149 |

A/ Figures are the sum of obligations incurred under PL 520, 79th Congress and PL 117, 76th Congress. Final obligations under PL 117, 76th Congress were incurred in Fiscal Year 1949.

B/ Figures are the sum of expenditures under PL 520, 79th Congress and PL 117, 76th Congress. Final expenditures under PL 117, 76th Congress were made in Fiscal Year 1951.

C/ 1956 and subsequent fiscal periods and cumulative expenditures are reported on an accrual basis.

Source: General Services Administration